The cellular telephone serves as my only telecommunications device. As I travel throughout my home of South Dakota, the quality cellular radiotelephone service I encounter spans what is easily described as superb, to horrid. Covering a state of over 77,000 square miles with only 750,000 people is not an easy task for cellular providers. But such as task hardly qualifies as impossible.

Within some towns and municipalities acceptable levels of service are possible, but seldom outside of these small areas. As America becomes a more mobile country, with interstate business becoming the norm, any changes and enhancements in rural service benefit not just the indigenous population, but also the entire country.

Before suggesting any changes or enhancements in policy, the Commission should be aware of the status quo, as experienced in South Dakota.

Well-populated regions of the state, Minnehaha County (MSA 267) for example, are highly courted by wireless service providers. Within Sioux Falls, one can find abundant GSM 1900, CDMA 800, PCS 1900, and 700 MHz switched radio service. Outside of MSA 267, the quality and penetration of service fails to deliver adequate service for the residents.

The average coverage radius for a cell anywhere outside of tiny islands of population exceeds twenty-five miles. Call hand-off, a hallmark of modern cellular radiotelephone service, is often impossible to obtain given the decreasing power of handheld telephones. A cellular network build out in the early 1990s, and largely completed by the mid-1990s, fails to address the needs in terms of coverage and performance of the population outside the ten largest cities.

Obtaining service slightly above a Marginal service level requires an investment in equipment that is both costly and complicated. What worked using the three-watt portable telephones so common in the early 1990s no longer provides sufficient service when used with .6-watt mobile telephones. Even on Interstate 90, the most significant east-west route in the country, continuous and reliable coverage does not exist within the state.

Two cellular providers provide in excess of 90 percent of the geographical coverage, and perhaps as much as 95 percent of the population coverage: Western Wireless, operating as Cellular One, and Verizon Wireless. While Cellular One has made significant improvements in their cellular network, adding CDMA and TDMA digital service in the major communities, Verizon Wireless has neglected its network. Only in a few areas within CMAs 267, 289, and 641 can users find coverage adequate given the capabilities of modern cellular radiotelephones. What worked well in 1993, for example, fails to provide acceptable coverage in 2003. And even Western Wireless continues to alert customers that its coverage outside of digital service areas presumes the availability of three-watt portable telephones. As technology advances, the ability of end-users to obtain this type of equipment diminishes. Soon a point will be reached when it is simply impossible for both technological and financial reasons to obtain the proper equipment.

Where current policy in spectrum distribution and quality considerations fails is in the balance between metropolitan areas and rural areas. In Section 15 of FCC 02-325, the Commission requests input as to how best describe "Rural" areas. Before any considerations of changes in policy are made, this distinction must be made. If one is to discuss service in rural areas, it is paramount that such a definition be made at the outset, not as an afterthought.

The use of the 100 persons per square mile threshold used in the Seventh Report is neither fair to consumers nor wireless providers. In terms of South Dakota, a density of 100 persons per square mile is rather populated. Consider that the aggregate population density of South Dakota is nine persons per square mile. A threshold of 100 fails to address their needs. To use the Census distinction of Rural is not appropriate either – as in defining that which is rural as that which is not metropolitan. However, the Census categorization of Rural is far more proper than the current ambiguous distinction.

An AMPS network does not, even by the most liberal interpretation of Section 309(j), promote an "efficient and intensive use of the electromagnetic spectrum" nor does it in any fashion fulfill the requirement to encourage the development of new technologies. At one time perhaps, AMPS service could be considered an efficient and intensive use of spectrum. With the development of spread spectrum and time division technologies, that is no longer the case. Simply citing the lack of capacity is not an adequate defense for the lack of digital technologies. Once analog service is in place, it is far too easy to carriers to cite this as a defense.

Efforts must be made to ensure that carriers are always employing the most advanced spectrum management technologies. The Commission can assist in the deployment of new technologies by employing a number of regulatory options:

1. Incentives for carriers in Rural areas who agree to deploy the most efficient technologies available at the time of build out. Preference should be given to carriers who agree to provide the most technologically advanced network over those who prefer the status quo.
2. Partitioning smaller slices of spectrum. When carriers are forced to do more with less, they may think twice about deploying technologies that are capacity limited.

Such methods benefit end-users greatly. In awarding smaller pieces of spectrum, rural telcos and small and medium-sized businesses can more easily afford to obtain spectrum, thereby increasing competition in rural markets. As I mentioned previously, despite the presence of numerous cellular providers in South Dakota as a whole, on a countywide basis, few residents have access to more than three carriers. Often it is only one. Allowing market forces to play a stronger role benefits consumers greatly.

The current leniency in and extreme length of build out dates contributes heavily to this problem. To have build out dates of five years is unacceptable. The development of technology outpaces the slack time frames awarded to so many licensees. A build out time of less than 24 months is necessary.

For carriers in Rural areas, Chairman Powell smartly remarked that the lack of capacity may allow for relaxed technical rules. Indeed, such an idea must be considered. Any means enabling Rural providers to more rapidly deploy a service must be employed. In many places in South Dakota, capacity has never been an issue, nor will it ever be as populations age and decrease. Why force upon prospective carriers an unnecessary burden that, while important to ensure functionality in metropolitan areas, is foolishly overzealous in Rural areas?

The current requirements to serve a given population in an given service area has failed for Rural areas. Rural areas should never be aggregated with any area other than like areas. Carriers must do more than cover a given population. They must cover both a given population and geographical area. CMA 289, or CMA 640 is an excellent example of market partitioning gone bad. A carrier in CMA 640 is able to cover only a small portion of geographical area, but a comparatively dense population, and still achieve its requirements of coverage. But what of the rest of CMA 640 that lives on ranches, or on the bluffs of the Missouri River? Not only have they zero access to wireless services, they have no hope of obtaining access given the status quo. In South Dakota, the situation is not good, but not nearly as bad as CMA 464 in Maine – one of the most hopeless situations of access in the United States.

A clearinghouse of information geared towards small telcos that will enable them to obtain information about spectrum acquisition and funding of this is one option, something that the Commission has mentioned in FCC 02-325. This would certainly be a vast improvement over the gobs of disparate documents that litter the FCC publications.

The future of access to Rural America lies in the hands of small and medium businesses. The large carriers have shown a repeated lack of interest in developing an advanced, spectrum efficient network that meets the needs of wireless consumers in Rural areas. Whatever the Commission decides to do, it must find any way to lower the bar for motivated entities to obtain spectrum, but it must also be strict in demanding that consumers are provided with the services in a timely manner.

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